Texas Environmental Flows Science Advisory Committee

Wednesday, October 7, 2009
9:00 a.m. – 3:30 p.m.
Texas Parks and Wildlife Department
1340 Airport Commerce Park, Building 6
Austin, Texas 78719

MINUTES

Call to order and Approval of meeting minutes from September 9, 2009
Chairman Huston called the meeting to order and introduced Ed Oborny as the newly appointed Committee member as appointed by the Environmental Flows Advisory Group. The Committee approved the September 9, 2009 meeting minutes with one clarification provided by member Fred Manhart.

Report on EFAG meeting
Chairman Huston gave a report on the September 30, 2009 meeting, noting the appointment of Ed Oborny to the SAC, as well as the appointment of the 2nd tier of SB3 basin groups: the Colorado and Lavaca Rivers and Matagorda and Lavaca Bays, and the Guadalupe, San Antonio, Mission, and Aransas Rivers and Mission, Copano, Aransas, and San Antonio Bays. Chairman Huston gave an update to the Advisory Group on SAC activities, and Kellye Rila, TCEQ, gave an update on the activities of the basin groups and their expert science teams.

Liaison reports on BBEST meetings
Fred Manhart gave a general overview of the activities of the Sabine/Neches BBEST. He noted that the group met on September 24, 2009 as a formal BBEST meeting in the first half of the day and the latter half of the 24th and all day of the 25th were dedicated to a workshop intended to develop a first draft of the group's final recommendations report. He noted that additional details would be given later in the day by BBEST members.

Bob Brandes noted that the Trinity/San Jacinto BBEST had not held a formal meeting since the last update but both the bay and estuary and freshwater inflow subcommittees had met. He also noted that additional details would be given later in the day by BBEST members.

Budget Update
Ruben Solis, TWDB, noted that the fiscal year 2010 budget had been approved and $226,000 had been allocated to the SAC for meetings, internal work performed by the members on deliverables, as well as work performed under contract through an outside entity.

Report on Environmental Flow Matrix implementation issues
Bob Brandes gave an overview of the SAC hydrologic subcommittee's work looking into the first of the implementation issues. He discussed the draft Instream Flow Matrix Application and Interpretation document. He noted the intent was to lay out potential options for which the program could be used to implement environmental flow standards. He clarified that the intent was not to dictate how permits would be written but to begin a discussion of the process of establishing environmental flow standards. He discussed key issues that needed to be addressed:

- Attainment frequencies, particularly with regard to base flows
- What will the environmental flow recommendations look like

He explained that there are two different views of this. One assumed that future flows are going to be influenced by future infrastructure, and the most practical prediction of future conditions is outlined in

the state water plan. This assumption could be used to predict future conditions by applying environmental flow conditions to the water development projects outlined in the plan. The other viewpoint is the idea of infinite infrastructure which assumes that all water not restricted by environmental flow standards and/or set asides would be diverted by that infinite infrastructure. The document discusses both views.

He outlined a six step conceptual model for flow matrix development and application, as discussed in the draft document. This process discusses not just the tasks to be performed by the BBESTs but the complete development of an environmental flow regime and guidance on how the full SB3 mandate can be achieved. In this discussion he and the group identified four issues that warranted further discussion at the SAC level:

1. Attainment frequencies
2. Infrastructure assumptions
3. Whether these six steps put forth in the document been developed correctly
4. Environmental set-asides

Mary Kelly noted the need to be precise in the language that is used. She also noted concern over using the state water plan in that doing so would necessitate the incorporation of assumptions into the standards, and that the basin and bay stakeholder groups need to weigh in on the infrastructure scenario.

Paul Montagna noted the importance to quantify and document the assumptions and uncertainty regarding recommendations; other members discussed the importance of this concept as well. Members discussed options to address uncertainty and the concept of infinite infrastructure. Regarding uncertainty, the members discussed how to specify the various components beyond hydrology in the concept of the HEFR matrix. Chairman Huston commented that the ultimate infrastructure assumption is not realistic. Mary Kelly put forth the question of what infrastructure assumptions should be considered and that the stakeholders should ultimately make this decision. The members revisited the issue of attainment frequency and the further decisions that need to be made with regard to the concept.

The SAC discussed what steps to take from this point in development of this implementation document. The SAC requested comments and feedback from individual members, the agencies, and the SAC hydrology subcommittee be submitted by October 16, 2009.

Sabine/Neches/Sabine Lake BBEST status discussion

Jack Tatum, Scott Hall, Rex Hunt, and Roger Kelly of the Sabine/Neches/Sabine Lake Bay BBEST gave an update of their activities. It was noted that the group's hydrologic subcommittee met on October 2, 2009 where they chose to utilize the full period of record in their analysis and utilize a frequency based approach. The biological subcommittee is set to meet on October 15, 2009, but staff of the Sabine River Authority had already begun to overlay some of the biological findings with the hydrological outputs from the work performed under contract. Rex Hunt gave an update of the water quality subcommittee, noting that the BBEST would use water quality as a check point rather than an overlay, focusing mainly on two parameters: temperature and dissolved oxygen. The data review focused on points collected at the twelve priority gages selected by the BBEST. The subcommittee determined that the data showed no clear relationship between water quality and flow. SAC members discussed uncertainty and the qualification and documentation of assumptions made in the BBEST recommendations. Roger Kelly echoed this comment and summarized the outline of the recommendations report, noting that the report would document the group's assumptions.

SAC members discussed potential implementation issues, identifying different areas that the Basin and Bay Stakeholder committee might want to consider, including environmental flow set asides.

Brief presentation on Rangia studies

Dr. Norman Johns, National Wildlife Federation (NWF), gave an update on a study they are conducting to determine whether *Rangia* can be used as an indicator species in the development of a freshwater inflow regime. He cited existing literature as to why and how *Rangia* has been used as an indicator in other situations. He outlined the four steps of the study: 1) characterize the existing population within Sabine Lake, 2) utilize salinity modeling looking for the effects of salinity on the existing population, 3) utilize salinity modeling to analyze with the proposed freshwater inflow regime, and 4) the synthesis of all these steps in order to help inform the development of a freshwater inflow regime. He noted that a similar approach was being utilized by the Trinity/San Jacinto BBEST. He summarized the sampling activities to date, and explained and presented the results of the preliminary modeling efforts. Members commented on the study design and results.

Trinity/San Jacinto/Galveston Bay BBEST status discussion

Bill Espey, Alan Plummer, Richard Browning, Tony Smith, and Joe Trungale gave an update on the workings of the Trinity/San Jacinto/Galveston BBEST. They discussed where they are at this point, some of the issues they need to further consider, and their initial findings with regard to recommendations. They also gave a brief discussion of recent and upcoming meetings that have been occurring. Tony Smith and Joe Trungale began with an update of the bay and estuary subcommittee and the approach/methodology they are utilizing. They noted that the subcommittee had identified indicator organisms based on their salinity niche, and chose to utilize the TxBLEND model in their analysis. They continued to discuss the general description of the B&E methodology identifying several considerations the group took into account. They discussed the decision points which the group used to characterize historical salinity patterns within the various sub-bay areas. They summarized the group's activities by noting that they accounted for analysis on the recent hydrologic period through an approximate-6%-ile adjustment factor, as well as utilizing flow/area relationships for mobile organisms and frequency of occurrence of preventative dermo conditions as check on flow recommendations to account for historical conditions for remaining biological community. They discussed their next steps noting that the subcommittee will develop a strawman freshwater inflow recommendation utilizing ranges based on bounds, frequencies utilizing criteria matrix and antecedent flows, and describe the supporting information. The workgroup will also evaluate historical frequencies of the developed flow magnitudes in the form of "strawman" recommendations with consideration to be given on how these recommendations might be used by BBEST.

Richard Browning began the discussion of the BBEST's instream flow subcommittee by explaining the work performed by their hydrology subcontractor and the outcome of their analysis. Alan Plummer identified some of the unique issues specific to the Trinity basin, noting that 25% of the State's population lives in the upper part of the basin and another 25% lives in the lower basin. He discussed the work of other contractors who performed the basin literature review which helped the group quantify the relationships between flow and some of the other environmental flow overlays. He noted that as there was an abundance of dissolved oxygen data, the group agreed to use dissolved oxygen as a surrogate for other indicators that can be used to evaluate the overall health of the ecosystem. He noted the group's discussions on documenting and qualifying the assumptions used in their decision making process. Tony Smith noted that the central issue driving the group's work was the mandate as outlined in SB3, utilizing best available science to develop recommendations. He noted the importance of how the BBEST defined the meaning and purpose of the various flow components. He discussed overbank flows and what the data showed regarding the specific needs for frequency and duration and how that is applied to a specific location. He continued discussing the

flow components, discussing the group's proposed alternative approach to characterizing base flow conditions, outlined in a document developed for BBEST consideration. He then discussed the areas where the group had not yet reached consensus. He outlined the group's discussions as to whether a narrative environmental flows recommendation by the BBEST meet the mandate and whether antecedent conditions being considered falls into the realm of implementation, i.e. beyond the mandate of the BBEST. The group discussed best professional judgment and whether the BBEST could/should use best professional judgment, with a shortage of actual data, to develop environmental flow recommendations. The SAC members commented that best professional judgment was not only acceptable, but likely would be necessary; and that it was imperative to document the caveats and level of confidence of the recommendations developed by the BBEST.

Freshwater Inflows Conference
Paul Montagna announced a conference to be held February 8-10, 2010 in Corpus Christi, Texas on Freshwater Inflows at a national scale. The conference is titled: Freshwater Inflows: 2010 and Beyond. The registration deadline is December 9, 2009. An agenda will be developed and distributed in the near future.

Water Quality overlay deliverable
Chairman Huston discussed the Water Quality overlay document that was distributed prior to the meeting. He noted that comments from SAC members and agency staff had been incorporated. The general consensus among the SAC was that the members were comfortable with the current version. As Ed Oborny was recently appointed and had not had an opportunity to comment, additional time was allowed for his comments to be submitted and addressed. Chairman Huston will draft a transmittal letter for distribution of the document and circulate amongst the SAC members. Key staff will incorporate any additional comments on the document and the transmittal letter, and the SAC intends to finalize and release before the November meeting.

Public comments
Dan Opdyke, TPWD, noted that due to the discussion of attainment frequencies and asked TWDB to modify the HEFR module to better address this area. Any future modifications will be scheduled prior to subsequent formation of future basin BBESTs.

Next Meeting (November 4) Agenda
The next meeting will be held at the Capitol Extension on November 4, 2009. Potential agenda items include:

- TWDB presentation on aspects of environmental flows outlined in the state water plan
- An update of the Hydrology subcommittee activities
- Update on the development of the draft implementation document
- Potential update from Sabine BBEST after their October workshop

Adjourn